AMENDMENTS TO THE CLAIMS

Please amend the claims as follows.

1. (Currently Amended) A real time data compression method for a data recorder that sequentially reads a plurality of sampled data points, the method comprising the steps of:

setting the first sampled data point as a starting point X_0;

sequentially examining the plurality of data points, wherein a present data point X_i being examined is determined whether it is in a predetermined tolerable error range;

wherein if the present data point X_i is in the predetermined tolerable error range, a previous data point X_{i-1} is ignored;

wherein the previous data point X_{i-1} and the total amount of data points accumulated from the starting point X_0 to the previous data point X_{i-1} are recorded, and the previous data point X_{i-1} is then set as a new starting point, when (a) the present data point X_i exceeds the predetermined tolerable error range or (b) the amount of the ignored data points reaches to a first predetermined amount;

wherein during a period that the sampled data points are varied quickly, and when the amount of the continuously examined data points is less than a second predetermined amount, the total amount of the data points that exceed their respective predetermined tolerable error ranges and the value of each of these data point are recorded,

wherein a data format is provided to store all recorded data points, the data format comprising:

a main region composed of multiple segments, wherein each segment has a predetermined length and is provided to store the value of a presented recorded data point and an amount value of the data points calculating from a previous recorded data point to the present recorded data point; and

a secondary region for recording a start time of the examining process, a value of sampling time interval and multiple blocks, wherein each block corresponds to several segments in the main region and includes a time value and a position value respectively representing a start time of the block and the start position of the block.

2. (Currently Amended) The method as claimed in claim 1, wherein the second predetermined amount is less ~~then~~ than the first predetermined amount.

3. (Currently Amended) The method as claimed in claim 1, wherein the total amount of these data points that are ~~continuously recorded~~ temporarily stored when the sampled data points are varied quickly is expressed by a negative number.

4. (Cancelled)

5. (Currently Amended) The method as claimed in claim 1 [[4]], wherein the time parameter of each block is calculated relative to the start time of the examining process and is expressed by multiples of sampling time interval.

6. (Currently Amended) The method as claimed in claim 1 [[4]], wherein in a first segment of the main region, the amount value is set to zero.

7. (Currently Amended) The method as claimed in claim 1 [[4]], wherein data of all recorded data points is firstly stored in the main region, and then in the secondary region.

8. (Original) The method as claimed in claim 5, wherein data of all recorded data points is firstly stored in the main region, and then in the secondary region.

9. (Original) The method as claimed in claim 6, wherein data of all recorded data points is firstly stored in the main region, and then in the secondary region.

10-16. (Withdrawn)